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Transformation peculiarities of gypsum cover of oil-Bearing strata in the outbreak zone (by example of Syukeyevskoye bitumen deposit)

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Abstract

Transformations of Upper Kazanian gypsum cover of oil-bearing strata in the outbreak zone are considered by example of Syukeyevskoye bitumen deposit. It was established that gypsum exhibits induced color around hydrocarbon fluid migration channels. The gypsum color changes with distance from hydrocarbon migration channels in following sequence: dark-brown-bla-k-green-white unaltered gypsum. The black color appears due to inclusions of fine dispersed pyrite and magnetite, green-due to iron hydrosulfates. Pyrite and magnetite are the waste products of hydrocarbon-utilizing microbial communities. Iron hydrosulfates are the products of pyrite oxidation. Similar patterns of relationship in gypsum colors enable to reveal ancient and current water-oil fluid migration paths in sulfate rocks.

Keywords

Black gypsum, Green gypsum, Hydrocarbons, Magnetite, Pyrite, Upper Kazanian substage